

**REMARKS**

Reconsideration in view of the foregoing amendments and the following remarks is respectfully requested. Moreover, the Applicants have reviewed the First, Non-final, Office Action of March 25, 2005, and submit that this paper is responsive to all points raised therein.

**Status of the Claims**

Claims 1-67 are presently pending. Claims 1, 3-6, 8, 9, 11, 18, 21-24, 26, 27, 32, 37, 40, 45, 47, 54 and 56 have been amended. Claims 57-67 are new and have been added in this paper.

Claims 1, 18 and 22 have been amended as discussed below. Claims 3-6, 8, 9, 11, 21, 23, 24, 26, 27, 32, 37, 40, 45, 47, 54 and 56 have been amended to have proper claim dependencies, and/or to be consistent with the claims on which they depend.

**Allowable Subject Matter**

The applicants note the allowance of claims 2-4, 11-14, 23-25 and 29-32 if rewritten to include the limitations of the claims on which they are based.

**Rejections Under 35 USC 102(e)**

Claims 1, 5-10, 15-22, 26-28 and 33-56, were rejected under 35 USC 102(e) as anticipated by Song, et al. (U.S. Patent No. 6,748,297) (Song '297).

Initially, the applicants request that Song '297 be officially made of record in a PTO-892 Form.

Claim 57, dependent on claim 1 has been added and is discussed here.

Independent claim 1 has been amended to recite a robot that monitors power levels dropping to a predetermined power level, and the robot moving to detect a signal from a docking station.

Claim 18 is directed to a docking station that sends a docking signal to be detected by a robot, and at least one contact member for receiving a corresponding contact member on the robot.

Claim 22 includes recitations to a robot that monitors power levels dropping to a predetermined power level and the robot receiving a signal from a docking station.

Claims 38 and 48 are directed to methods for robot docking that perform the aforementioned actions including, monitoring power levels dropping to a predetermined power level and receiving a signal from a docking station.

Song '297 is directed to a robot 10 that vacuum cleans, and an external charging apparatus 80, in which it "docks", for its battery to be recharged. The robot 10 includes a mechanism for detecting a charging command signal, based on battery power. With the charging command signal detected, the robot 10 docks in the external charging apparatus 80 by taking a photograph of the area above it, comparing the photographic data with the data from a previous photograph of the area above, that the robot took when it was in the external charging apparatus 80. The robot then analyzes the photographic data to determine a course of travel from its present position to the external charging apparatus 80. The robot then moves toward the external charging apparatus 80 along the determined course of travel.

Song '297 is silent as to any signals emitted by the external charging apparatus 80, to the robot 10 to cause docking. Moreover, the Examiner refers to a line in Fig. 1 of Song '297, between the robot 10 and the external charging apparatus 80 as a signal.

It is respectfully asserted that this line is not a signal, but rather a visual indicator of the correspondence between each of three prongs on the charging terminal 56 of the robot 10, and each of the corresponding three prongs on the power supply terminal 82 of the external charging apparatus 80. Specifically, the correspondence of three prongs is indicative of three phase power, used to power the robot's battery in Song '297. Accordingly, the line has nothing to do with a signal sent between the external charging apparatus 80 and the robot 10, or vice versa.

Based on the above, Song '297 fails to show any structure on the robot for detecting a signal from a docking station. Moreover, since the docking process is completed by photographic data analysis, Song '297 fails to teach or suggest any signals for continuing docking sent between the docking station and the robot, or vice versa. Accordingly, it is respectfully asserted that Song'297 neither anticipates under 102(e) nor renders obvious under 35 USC 103(a), claims 1, 18, 22, 38 and 48.

Based on the above, since claims 1, 18, 22, 38 and 48 are neither anticipated by, under 35 USC 102(e), nor made obvious under 35 USC 103(a) by Song '297, claims 57, 5-10, and 15-17, 19-21, 26-28 and 33-37, 39-47, and 49-56, respectively dependent thereon, are also allowable over Song '297. These claims further distinguish the invention over the cited art.

#### Additional Remarks and Conclusion

New claims 57-67 have been added to round out the scope of the invention.

Claims 57 and 58 are dependent on claim 1. Claims 59 and 60 are dependent on claim 18, while claim 61 is dependent on claim 22. Claim 57 has been discussed above.

It is respectfully asserted that these claims are allowable over the art of record, as they are dependent on allowable claims 1, 18 and 22, respectively. These claims further distinguish the invention over the cited art.

Claims 62-64 are objected to claims 2-4, as rewritten such that claim 62 includes claim 2 to include the limitations of claim 1, on which it is based. Claims 63 and 64 are claims 3 and 4, as dependent on claim 62. As claim 2 was objected to, as allowable if rewritten to include the limitations of the base claims, it is respectfully asserted that claims 62-64 are allowable over the art of record.

Claims 65-67 are objected to claims 23-25, as rewritten such that claim 65 includes claim 23 to include the limitations of claim 22, on which it is based. Claims 66 and 67 are claims 24 and 25, as dependent on claim 65. As claim 23 was objected to, as allowable if rewritten to include the limitations of the base claims, it is respectfully asserted that claims 65-67 are allowable over the art of record.

The applicants also note the citations of Taylor, et al. (U.S. Patent Publication No. 2004/0204792 A1), Renken, et al. (U.S. Patent Publication No. 2004/0225462 A1), Taylor, et al. (U.S. Patent Publication No. 2004/0211444 A1), Taylor, et al. (U.S. Patent Publication No. 2004/0236468 A1), Taylor, et al. (U.S. Patent Publication No. 2004/0244138 A1), Taylor, et al. (U.S. Patent Publication No. 2005/0000543 A1), Taylor, et al. (U.S. Patent Publication No. 2005/0010331 A1), Abramson, et al. (U.S. Patent Publication No. 2003/0120389 A1), Abramson, et al. (U.S. Patent Publication No. 2003/0060928 A1), Nourbakhsh, et al. (U.S. Patent No. 6,760,647), Shen, et al. (U.S. Patent No. 6,636,781), Walsh (U.S. Patent No. 5,632,404), Colens (U.S. Patent No. 6,389,329), Kim (U.S. Patent No. 6,308,114), and the articles, Silverman, et al., "Staying Alive: A Docking Station For Autonomous Robot

Recharging", 2002, IEEE pp. 1050-1055 and Chardard, et al., "Swimmer: Final Sea Demonstration Of Third Innovative Hybrid AUV/ROV System", 2002, IEEE, pp. 17-23, to complete the record.

Additionally, U.S. Patent No. 6,448,297 to Turowski-Wanke, et al, has been cited, but this patent is directed to the chemical arts and has nothing to do with robotics. It is believed that U.S. Patent No. 6,748,297 to Song, et al. was intended. This is addressed above.

Should the Examiner have any questions or comments as to the form, content, or entry of this paper, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Allowance of all pending claims, 1-67, is respectfully requested.

Respectfully submitted,

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